PC Code 128931
CAS 104040-79-1

00162067

DATA EVALUATION RECORD

1. Chemical: CN-11-4962
diglycolamine salt of dicamba
(2-methoxy-3,6-dichlorobenzoic acid)

2. Test Material: Formulated Product
40.15% dicamba

3. Study Type: Freshwater Fish Acute Toxicity

Species Tested: Lepomis macrochirus

4. Study ID: Swigert, J.P. and J. Bowman (1986) Static Acute Toxicity Report No. 34105. Acute Toxicity of CN-11-4962 to Bluegill Sunfish (Lepomis macrochirus). Prepared by ABC Labs, Columbia, MO; submitted by Sandoz Crop Protection Corporation, Chicago, IL. EPA Accession No. ~~263863.~~ 00162067

5. Reviewed By: Thomas M. Armitage
Fisheries Biologist
EEB/HED
Signature: Thomas M. Armitage
Date: 9-17-86

6. Approved By: Raymond W. Matheny
Supervisory Biologist
EEB/HED
Signature: Raymond W. Matheny
Date: 9-17-86

7. Conclusion:

The study is scientifically sound and with a 96-hour LC_{50} > 400 mg/L the diglycolamine salt of dicamba is considered to be practically nontoxic to the warmwater fish Lepomis macrochirus.

The study fulfills the Guidelines requirement for an acute toxicity determination for a warmwater fish species using the diglycolamine salt of dicamba.

8. Recommendation: N/A.

9. Background:

The study, an acute toxicity determination for a warmwater fish species with the diglycolamine salt of dicamba, was submitted to fulfill testing requirements for full registration of the herbicide.

10. Discussion of Individual Test: N/A.

11. Materials and Methods:
(Definitive Test)

a. Test Animals: were bluegill sunfish Lepomis macrochirus obtained from Osage Catfisheries, Inc. in Osage Beach, MO. The fish had a mean weight of 0.22 (± 0.026) g and a mean standard length of 21 (± 0.82) mm. This provided a test chamber loading biomass of 0.15 g/L.

Test system: five (5) gallon glass vessels containing 15 L of test solution. Static exposure to 22 °C for 96-hour duration.

b. Dose: Static bioassay using nominal concentrations; no solvent used.

c. Design: Ten fish per level; five dose levels plus control (0, 100, 180, 320, 560, and 1000 ppm).

d. Statistics: Statistical analysis of the concentration vs. effect data (generally mortality) was obtained by employing a computerized LC_{50} program developed by Stephan et al. (1978). This program calculated the LC_{50} statistic and its 95 percent confidence limits using the binomial, moving average, and probit tests.

12. Reported Results:

The study authors found that the 96-hour LC_{50} was > 1000 ppm. All results were based on the nominal concentrations of 100, 180, 320, 560, and 1000 mg/L. The 96-hour no-observed effect concentration was estimated to be 1000 mg/L.

13. Study Authors' Conclusions/QA Measures:

96-hour LC_{50} (95% ci) > 1000 mg/L.

In accordance with ABC Laboratories intent that all studies conducted at our facilities are designed and function in accordance with good laboratory practice regulations and protocols for individual laboratory studies, an inspection of the final report for CN-11-4962 was conducted and found to be in an acceptable form by a member of our Quality Assurance Unit. An inspection of the daily mortality rate of the test organisms prior to the initiation of the study indicated that they were

in good health and should not bias the observed mortality in the study. A procedure audit for bluegill sunfish was conducted on January 7, 1986. No deviations were noted. A final inspection of all data and records on January 20, 1986 indicated that the report submitted to you is an accurate reflection of the study as it was conducted by ABC Laboratories.

14. Reviewer's Discussion and Interpretation of the Study:

a. Test Procedures: The procedures followed were in accordance with protocols recommended by the Guidelines. However, formulated products containing only 40.15% dicamba was used as test material. Therefore, the LC_{50}'s are adjusted to determine the LC_{50} on the basis of 100% dicamba. The only additional ingredient, apart from the dicamba salt in the formulation, was water.

b. Statistical Analysis: No mortality was observed. Therefore, no statistical analysis was required.

c. Discussion/Results: With a 96-hour LC_{50} > 400 ppm, the diglycoamine salt of dicamba is practically nontoxic to bluegill sunfish.

d. Adequacy of Study:

1. Classification: Core.

2. Rationale: The study was conducted in accordance with accepted protocol. The LC_{50} was adjusted because the formulation tested contained only 40.1% dicamba.

3. Reparability: N/A.

15. Completion of One-Liner for Study:

One-liner form completed August 18, 1986.

16. CBI Appendix: N/A.

TABLE 3

Mortality Rates and Water Quality Measurements During the Acute Toxicity Test of CN-11-4962 to Bluegill Sunfish (Lepomis macrochirus)

Nominal Concentration (mg/l)	Percent Mortality Hours			Water Quality 0-hours			48-hours			96-hours		
	24	48	96	Temp. °C	D.O.[a] mg/l	pH[b]	Temp. °C	D.O. mg/l	pH	Temp. °C	D.O. mg/l	pH
Control	0	0	0	22	9.7	7.5	23	7.8	7.1	23	7.0	7.0
100	0	0	0	22	9.6	7.5	23	7.6	7.1	23	7.0	7.0
180	0	0	0									
320	0	0	0									
560	0	0	0									
1000	0	0	0	22	9.6	7.5	23	7.6	7.2	23	7.1	7.1

[a]Dissolved oxygen concentrations - Dissolved Oxygen Probe (YSI Model 54).

[b]pH - pH Probe (Corning Model 476182) used with a Corning Model 125 pH and mV meter.

NOTE: Dissolved oxygen saturation at the test temperatures of 22°C and 23°C is 8.8 and 8.7 mg/l, respectively.